

1990

Computer Education Complete Masters Program

Nova Southeastern University

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COMPUTER EDUCATION

COMPLETE MASTERS PROGRAM AND SPECIALIST PROGRAM

Degree offered by the Center for the Advancement of Education in cooperation with the Office of New Programs.

WHY A DEGREE IN COMPUTER EDUCATION?

The age of the microcomputer is here. Microcomputer systems are widely used in schools for both instructional and administrative purposes. Being computer-literate is rapidly becoming more and more important for today's teachers. We expect computer education to take its place alongside science, English, social studies and mathematics education as an established discipline since it cuts across all academic disciplines. Teachers who can teach this new discipline are already in demand in many areas of the country.

PROGRAM PURPOSE

The Computer Education Program is designed to prepare teachers to assume leadership roles in the utilization of microcomputers in the K-12 schools. Teachers will be able to evaluate and select microcomputer hardware and software for a variety of uses in the schools ranging from classroom information management to direct instruction. The program emphasizes practical hands-on experience in our well-equipped microcomputer laboratory and creative professional contributions to the development of microcomputer applications for schools.

THE PROGRAM

The Center for the Advancement of Education (CAE) is offering the degree program in cooperation with the Office of New Programs (ONP). The 36-semester hour program leads to either the Master of Science or the Educational Specialist degree in Computer Education, or, to a hyphenated major-Computer Education degree.

PROGRAM CALENDAR

Several convenient schedules are offered for the Computer Education Program: Saturday Courses, Evening Courses, Continuous Progress Laboratory Courses, and Intensive Courses During Vacation Periods.

APPLICATION REQUIREMENTS

For the Master's degree program...

A Bachelor's degree from an accredited institution.

For the Educational Specialist degree program...

A Master's degree in education from an accredited institution.

For special-student status (non-degree seeking)...

A Bachelor's degree from an accredited institution.

STUDENT COSTS

Costs include a one-time application fee of \$15.00 for students who have not previously applied to a Nova program. The tuition for all three semester credit courses including individualized courses is \$240.00. Six semester credits of work, such as the Microcomputer Applications Project, is \$480.00.

FINANCIAL AID

Information on financial aid and Veterans' benefits may be obtained from the Nova University Financial Aid Office — (305) 475-7408.

MAJORS AND REQUIREMENTS

Two prerequisite courses, CED 522, (or any of the other discipline-oriented 522 courses) and CED 600 are required. The prerequisites may be waived if the student has equivalent microcomputer experience. Students may choose either a hyphenated major consisting of a specific discipline area combined with Computer Education or, simply, a Computer Education major.

REQUIREMENTS FOR COMPUTER-EDUCATION MAJOR:

Computer Education majors will be required to take one 6-credit Common Core Module with CAE and a 6-credit Internship or Microcomputer Application Project (practicum) in Computer Education. The remainder of the 36-credit coursework will be in Computer Education.

REQUIREMENTS FOR A HYPHENATED MAJOR-COMPUTER ED:

Most discipline areas offered as a major by CAE may be combined with Computer Education in the hyphenated major mode. For example, Mathematics-Computer Education; Science-Computer Education, etc. Requirements for the hyphenated major are the 9-credit Major Module with CAE; all Computer Education courses with the appropriate discipline area prefix; an Internship or Microcomputer Applications Project (practicum) in Computer Education. The remainder of the 36-credit coursework will be in Computer Education.

TRANSFER OF CREDIT

Thirty-six credits of graduate work must be completed for

the M.S. or Ed.S. degrees. Transfer of graduate level credits up to a maximum of six semester hours from an accredited institution (with a grade of "A" or "B") may be allowed upon approval.

ADMISSION INTO CANDIDACY

After completion of three (3) Computer Education courses with a 3.0 or higher grade point average, you become eligible for admission as a candidate for the Master's or Educational Specialist degree. Prior to completion of the three courses you must submit three letters of recommendation from colleagues in education who know your work, an official transcript from your previous degree-granting institution, and a copy of your teaching certificate, if appropriate, to complete the admissions process. The Candidacy Committee then evaluates completed files, confirms that the required 3.0 GPA was earned for the initial three courses, and notifies you of admission into degree candidacy.

GRADING

Computer Education students are required to maintain a grade-point average of at least a 3.0 (B average) for retention in the program.

ELECTIVE MODULE

Students enrolled in the CAE program may elect to take 3 CED courses as a Computer Education elective Module. The courses are CED 522, CED 600 and CED 617. Substitutions for any or all of these courses may be made to meet the needs of students with varying computer experience.

REGISTRATION

Registration forms and tuition must be received at the Office of New Programs prior to the first day of class. For more information on registration or counseling call: Broward 475-7445; Dade 940-6447 ext. 7445; Palm Beach 732-6600 ext. 7445; Florida WATS 1-800-432-5029 ext. 7445.

LOCATION

The Microcomputer Laboratory is located on the Main Campus, Parker Building, third floor, Room 351. Please feel free to stop and visit our facilities and see a demonstration of the educational features of microcomputers.

COURSE DESCRIPTIONS

CED 622 Interactive Video CED 501 — Electronic Classroom Management

This course includes an examination of the role of information in classroom management from an information science perspective. The application of microcomputers to the maintenance of classroom data bases and report generation is stressed. Teachers learn techniques for the collection, structuring and reporting of information for use by students, parents, administrators and themselves, designed to lead to the improvement of classroom management and teaching skills. **Prerequisites:** CED 522, CED 600

CED 521 — Computer Assisted Instruction, Courseware Version

This course traces the theoretical foundations of CAI from its origin on large time-shared systems through to the modern setting. Students will use packaged courseware software such as CDSi, Aristotle's Apple, and Caiware to learn to prepare interactive computer aided instruction sequences for microcomputers. The

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role of microelectronics in present and future directions of CAI will be covered to broaden the student's understanding of the potential of CAI. **Prerequisites:** CED 522, CED 600

CED 522—Microcomputing in the Curriculum

Strategies and methods for integrating microcomputing within the elementary and secondary curriculum are highlighted. This entry level course seeks to prepare teachers for dealing with microcomputers in the classroom. Extensive hands-on experience with powerful microcomputers is featured. Teachers will have opportunities to operate educational programs on the microcomputer, to learn programming skills in the BASIC and PILOT languages and to explore the full range of microcomputer applications suitable for classroom use.

CED 600 — Computer Literacy

This entry level course explores the capabilities of third generation computer systems in classroom and

school administrative environments. Much of the focus is on the newer microcomputer systems costing under \$10,000. Some limited hands-on experience is provided. Basic computer organizations and educational applications are discussed.

CED 617 — Software Search and Evaluation

New microcomputer software, programs, and instructional courseware are becoming available at a geometrically increasing rate. The distribution process, the terms of availability and the quality vary widely. Students will learn to identify sources, evaluate terms and quality and to match software to uses. The curriculum theory implications and learning theory applications will be included along with concepts of good programming and standards of good documentation practice will be covered. **Prerequisites:** CED 522, CED 600

continued

Call for more information or return this request form to: Mr. Fred Kellisch, Office of New Programs
Nova University, 3301 College Avenue,
Fort Lauderdale, FL 33314

I am interested in:

_____ Master's Degree Program. _____ Education Specialist Degree Program.

I would like:

_____ A schedule of courses. _____ To register, send a registration form.

NAME _____ Home Phone _____

ADDRESS _____ Business Phone _____

City

State

Zip

CED 736
Intro to Logo

COURSE DESCRIPTIONS continued

CED 729 Advanced Programming of Microcomputers in Pascal

CED 618 — Microcomputer Systems Search and Evaluation

This course provides extensive information about the required standards for hardware and software. Students will be exposed to a number of types of systems and will do extensive research regarding their own requirements for both hardware and software. The selection and evaluation of packaged software suitable for educational users is discussed as are documentation standards. Additionally, the relevant issues in systems software and utilities are also presented. **Prerequisites:** CED 522, CED 600

CED 621 — Computer Assisted Instruction

Using both the PILOT language and BASIC language students will learn to prepare interactive computer assisted instruction lessons for microcomputers. The theoretical foundations of CAI will be traced from its origins on large time-shared systems through to the contemporary scene. The role of microelectronics, in the present, trends, and future directions of CAI will be covered in an attempt to broaden the student's understanding of the potential of CAI. **Prerequisites:** CED 726 or CED 725 and CED 735

CED 625 — Curriculum Design and Microcomputers

Microcomputers offer powerful assistance to curriculum designers primarily through wordprocessing. Basic wordprocessing hardware and software alternatives are evaluated. The variety of ways in which curriculum design can currently be enhanced and made more efficient are covered along with an imaginative look at future applications in the area of computer assisted editing and real-time course planning and documentation. The course covers a thoughtful study of the implications for curriculum and learning theory reform.

CED 675 — Simulation

The role of simulations in the classroom is perhaps the most effective way for an entire class to use a single microcomputer effectively. Students will learn to operate and evaluate existing computer simulations. They will also learn to construct simulations related to their own teaching areas. The theoretical phase of the course will cover general problems of the various classes of simulation showing how they are handled in higher level special purpose simulations languages such as EPSS, GASP, and MINI DYNAMO. **Prerequisites:** CED 725 and CED 735

CED 680 — Teaching Basic Programming

Content, materials, and methods for teaching BASIC programming in the schools. Program development, evaluation techniques, resources, and teaching principles will all be discussed. **Prerequisites:** CED 725, CED 735

CED 700 — Internship in Microcomputer Education

A contract-type arrangement is made with each student to provide a realistic microcomputer field experience. The internship is under the joint supervision of a Nova staff member and a practicing professional.

CED 701 — Information Science in the Classroom

This course examines the role of information in classroom management from an information science perspective. The application of microcomputers to the maintenance of classroom data bases and report generation is stressed. Students will devise their own BASIC programs for the collection, structuring, and reporting of information designed to lead to improvements of classroom management and teaching skills. A sequence in Computer Managed Instruction is also presented pointing out the differences between CMI and CAI. Students will then prepare their own prescriptive exercises in BASIC and PILOT. **Prerequisites:** CED 725, CED 735

CED 721 — Administrative Applications of Microcomputers

This course will examine the evolving role of microcomputers in school administration. Applications range from wordprocessing to budget preparation. Special attention will be given to the concept of distributed processing. Students will receive hands-on experience in several applications. **Prerequisites:** CED 522

CED 725 — Programming Microcomputers in Basic

An introductory course in BASIC programming exclusively geared to microcomputers. The opportunity will be offered to become familiar with the specific requirements for programming and writing BASIC programs for several varieties of state-of-the-art microcomputers. The course is taught in a laboratory with extensive hands-on opportunity. **Prerequisites:** CED 522 and CED 600

CED 726 — Programming Microcomputers in Pilot

PILOT is a specialized, mnemonic, high level language designed to permit efficient creation, evaluation and revision of computer assisted instruction courseware. Alternative learning theories are used to guide students in the construction and validation of a variety of program sequences illustrating sophisticated and effective lesson logic. **Prerequisites:** CED 522 and CED 600

CED 727 — Programming Microcomputers in Fortran

This is an applied course in FORTRAN programming. Special emphasis is given to the selection of applications and design of programs and program documentation. **Prerequisites:** CED 725, CED 735

CED 728 — Programming Microcomputers in Pascal

This is an applied course in programming in a structured language. This course is especially useful to students who wish to write software for broad distribution. **Prerequisites:** CED 725, CED 735

CED 735 — Advanced Programming of Microcomputers in Basic

An advanced course in BASIC programming exclusively geared to microcomputers. Special emphasis will be placed on more conceptually sophisticated applications and on file design. The special needs and capabilities of a variety of state-of-the-art microcomputers will be covered in this problem-solving oriented course. **Prerequisites:** CED 725 or equivalent

CED 750 — Independent Study of Selected Topics in Microcomputing

This course permits the student to do individualized study under the supervision of a faculty member or adjunct professor in areas not covered in other courses. **By arrangement only**

CED 788 — Microcomputer Application Project

The MAP provides the opportunity to apply microcomputer technology in an educational environment. A premium is placed on inventiveness and the creation of a software product with practical value. The product must be submitted in an operating form, tested and free of bugs. Appropriate documentation must accompany the product to permit its use by others.

BED 500 — Wordprocessing With Microcomputers

Electronic technology can increase the efficiency of the preparation of written documents of all types from business letters to books. In this course, the student will examine critically the state-of-the-art microcomputer as wordprocessor, along with the most advanced word processing software. Upon completion the student will be an intelligent selector and competent user of this technology and will be prepared to evaluate and reduce them to practice.

BED 522 — Business Applications of Current Technology

Exploring recent developments in technology, participants will examine specific business concepts which apply to the use of microcomputers. Extensive hands-on experience with microcomputers is featured. Teachers will have the opportunity to operate business oriented software on the microcomputers and explore the full range of business applications within an office and/or classroom setting.

BED 635 — Microcomputing in the Business Education Classroom

The emerging role of microcomputers and computers in general in the business world is presented. Applications covered include wordprocessing, electronic filing, data base management, general ledger, accounts receivable.

continued

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COURSE DESCRIPTIONS continued

able and payable, mail lists and stockmarket analysis. The microcomputer is also viewed in its instructional role in classroom applications such as typing skills development and drill, and practice of business related mathematics skills.

MAT 522—Mathematical Applications of Current Technology

Exploring recent developments in technology, participants will examine specific mathematical concepts which apply to the development and use of computer programming. Using microcomputers, students will acquire basic programming skills to enable them to analyze mathematical concepts into their component parts and to synthesize this information to develop mathematical units which can be used in computer-assisted (CAI) and/or computer managed instruction (CMI).

MAT 640—Microcomputers in the Mathematics Classroom

An indepth course presenting the application of microcomputers in the mathematics classroom. The applications covered will range from development of drill and practice exercises in remedial arithmetic through selected topics in advanced mathematics such as curve sketching, problem solving, and mathematical modeling.
Prerequisite: CED 725

SCI 650—Microcomputers in the Science Classroom

A comprehensive course treating the spectrum of applications of microcomputers in science in an open-ended manner. Applications covered include simulation, demonstration, drill and practice, test construction and grading, computer programming as a discipline, and graphics. The computer is also treated as a phenomenon of applied science. Emphasis is on developing new applications in science education. **Prerequisites:** CED 725, CED 735

MC 615—Microcomputer Graphics

This is an introductory course in microcomputer graphics. Students will review hardware and software aspects of graphics on microcomputers in a hands-on laboratory setting. Emphasis will be on the invention of graphics application for their own use. **Prerequisites:** CED 725, CED 735

MC 705—Communicating with Microcomputers

This applications oriented course provides a survey of computerized communications theory and technique. Hardware and software of communications systems are introduced. Practice is provided in local and remote computer conferencing, electronic bulletin boards, and electronic mail. The role of microelectronics in improving human communications and in facilitating creative problem solving is stressed.

LT 621—Effective Functioning of School Media Centers

Students will examine common problems in the operation of school media centers and will explore ways of using technology to provide solutions that will increase the effectiveness of media centers. Through this process students will become aware of the technological options available to them for the improvement of media centers and their operation. Each student will develop a plan for the use of a specific technique to increase the efficiency and/or effectiveness of a media center.

LT 522—Analysis Retrieval and Dissemination of Information

Following an examination of various techniques for the analysis, retrieval and sharing of information in a variety of formats, students will attain basic proficiency in the use of modern technology to help accomplish these tasks. Each student will plan a project to handle information more efficiently in a media center using a specific technique.

LT 622—Use of Modern Technology to Improve Bibliographic Control

Students will explore currently available technology to handle information in various formats. Each student will design a system for the efficient analysis, retrieval, and/or sharing of information commonly found in a media center.